



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,262	08/30/2001	Tohru Ishitani	1743/193	8263
26646	7590	01/17/2003	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			NGUYEN, LAM S	
		ART UNIT		PAPER NUMBER
		2853		
DATE MAILED: 01/17/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)		
	09/943,262	ISHITANI ET AL.		
<b>Period for Reply</b>  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.	Examiner	Art Unit		
	LAM S NGUYEN	2853		
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --				
<b>Status</b>				
1) <input type="checkbox"/> Responsive to communication(s) filed on _____.				
2a) <input type="checkbox"/> This action is FINAL.                  2b) <input checked="" type="checkbox"/> This action is non-final.				
3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.				
<b>Disposition of Claims</b>				
4) <input checked="" type="checkbox"/> Claim(s) <u>1-12</u> is/are pending in the application.				
4a) Of the above claim(s) _____ is/are withdrawn from consideration.				
5) <input type="checkbox"/> Claim(s) _____ is/are allowed.				
6) <input checked="" type="checkbox"/> Claim(s) <u>1-12</u> is/are rejected.				
7) <input type="checkbox"/> Claim(s) _____ is/are objected to.				
8) <input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.				
<b>Application Papers</b>				
9) <input type="checkbox"/> The specification is objected to by the Examiner.				
10) <input checked="" type="checkbox"/> The drawing(s) filed on <u>30 August 2001</u> is/are: a) <input type="checkbox"/> accepted or b) <input checked="" type="checkbox"/> objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).				
11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner.  If approved, corrected drawings are required in reply to this Office action.				
12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.				
<b>Priority under 35 U.S.C. §§ 119 and 120</b>				
13) <input checked="" type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) <input checked="" type="checkbox"/> All b) <input type="checkbox"/> Some * c) <input type="checkbox"/> None of: 1. <input checked="" type="checkbox"/> Certified copies of the priority documents have been received. 2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____. 3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received.				
14) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.				
15) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.				
<b>Attachment(s)</b>				
1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)		4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .		
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)		5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)		
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .		6) <input type="checkbox"/> Other: _____ .		

**DETAILED ACTION*****Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: FIG. 1 does not include all reference signs. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

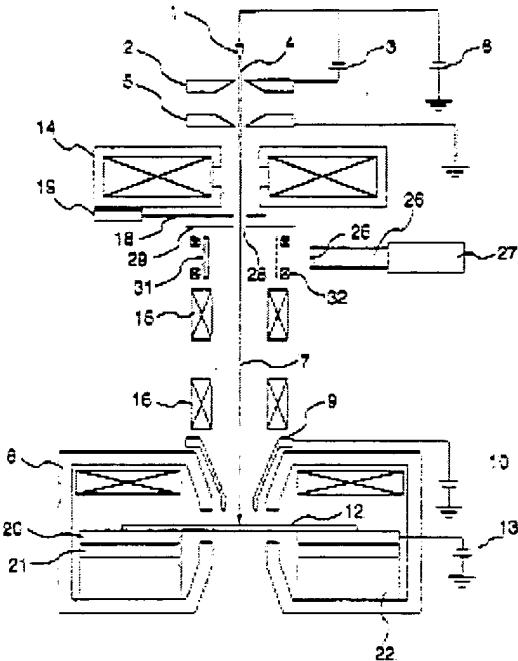
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3, 4, 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todokoro et al. (US 5900629) in view of Kakibayashi et al. (US 5866905).

Todokoro et al. disclose a scanning charged-particle microscope having:  
a charged-particle source (FIG. 4, element 1),  
a lens for focusing the charged-particle optical beam emitted from said charged-particle source (FIG. 4, element 14), and  
a scanning deflector for scanning said charged-particle optical beam in two-dimensional form on a sample (FIG. 4, elements 15-16),  
wherein said scanning charged-particle microscope is characterized in that

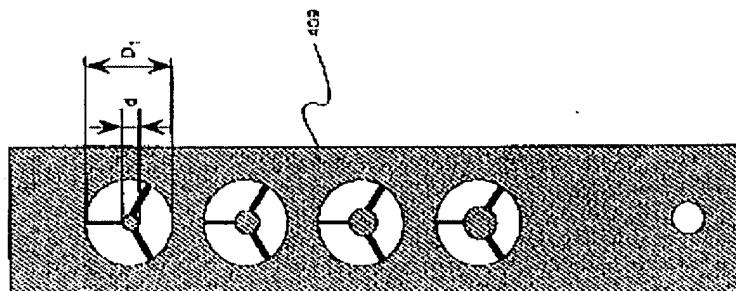
a passage aperture for limiting the passage of the charged-particle optical beam is located between the charged-particle source and said scanning deflector (FIG. 4, elements, 28-29).



Todokoro et al. does not disclose that the passage aperture formed in a plate-like body movable with respect to said charged-particle optical beam (**Referring to claims 3, 9**) includes a member for limiting the passage of the charged-particle optical beam provided at least in the center of said passage aperture, the plate-like body also includes a circular aperture (**Referring to claims 4, 8**), and wherein the scanning charged-particle microscope is characterized in that said circular aperture and said annular aperture are formed in a first plate-like body and a second plate-like body, respectively, in that said first plate-like body is provided with a charged-particle optical beam cutoff portion in addition to the circular aperture and said second plate-like body is provided with a circular aperture in addition to the annular aperture, and in that both the first plate-like

body and the second plate-like body are provided with a movement feature (**Referring to claims 10, 11**).

However, Kakibayashi et al. disclose a passage aperture formed in a plate-like body movable with respect to said charged-particle optical beam (FIG. 21: the element 409 is movable respectably to the charged-particle optical beam for selecting an appropriate aperture) having a member for limiting the passage of the charged-particle optical beam provided at least in the center of said passage aperture (FIG. 20-22, element 409), the plate-like body also includes a circular aperture (FIG. 21: the aperture without a limiting element), and wherein the scanning charged-particle microscope is characterized in that said circular aperture and said annular aperture are formed in a first plate-like body and a second plate-like body, respectively, in that said first plate-like body is provided with a charged-particle optical beam cutoff portion in addition to the circular aperture and said second plate-like body is provided with a circular aperture in addition to the annular aperture, and in that both the first plate-like body and the second plate-like body are provided with a movement feature (FIG. 20, elements 409, 410).



Therefore, it would have been obvious for one having ordinary skill in the art at

Art Unit: 2853

the time the invention was made to replace the diaphragm having the aperture disclosed by Todokoro et al. by the movable plate-like bodies having the annular apertures and the circular aperture as disclosed by Kakibayashi et al. The motivation of doing so is to provide an electron detection instrument for election microscope that can detect an angle distribution of intensity of scattered, diffracted, refracted, or transmitted electrons through a specimen at a high sensitivity and a high signal-to-noise ratio in a desired range of angle as taught by Kakibayashi et al. (column 4, line 66 to column 5, line 4).

2. Claims 2, 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todokoro et al. (US 5900629) in view of Kakibayashi et al. (US 5866905), and further in view of Shinichi (JP 2000-012454)

Todokoro et al. and Kakibayashi et al. disclose the claimed invention as discussed above except that wherein the scanning charged-particle microscope is characterized in that the half-opening angle of said aperture for said charged-particle optical beam focused on a sample by said focusing lens has a band with respect to specific values of  $\alpha_a$  and  $\alpha_b$ .

Shinichi discloses wherein the scanning charged-particle microscope is characterized in that the half-opening angle of said aperture for said charged-particle optical beam focused on a sample by said focusing lens has a band with respect to specific values of  $\alpha_a$  and  $\alpha_b$  (Abstract:  $\alpha$  is from 1.5[mrad] to 3[mrad]).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to characterize the half-opening angle of the aperture in the scanning electron microscope disclosed by Todokoro et al. in view of Kakibayashi et al. in the band with respect to specific values of  $\alpha_a$  and  $\alpha_b$  as disclosed by Shinichi. The

Art Unit: 2853

motivation of doing so is to achieve high resolution while realizing high throughput using large-current electron beams as taught by Shinichi (Abstract).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BARLOW can be reached on (703)308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LN  
January 12, 2003

*JBarlow*  
John Barlow  
Supervisory Patent Examiner  
Technology Center 2800